

PRELIMINARY AUDIT OF DOUBLEDUKE STATE FOREST COMPARTMENTS 144, 145 and 146

Dailan Pugh, June 2010
For North East Forest Alliance

INTRODUCTION

This report is the result of a 2 day assessment of logging operations in compartments 144, 145 and 146 of Doubleduke State Forest undertaken on behalf of the North East Forest Alliance (NEFA) on the weekend of the 19 and 20 June 2010. This assessment was undertaken by Dailan Pugh in company with consultant zoologists David Milledge and Georgia Beyer and consultant botanists Annette McKinley, Barbara Stewart and Andrew Murray. A number of other people assisted at various times.

These inspections were only of a preliminary nature as in the time available it was only possible to inspect limited areas. Further inspections will be made as time permits.

This brief audit has revealed that there has been a systemic failure to implement the measures required to protect Threatened species (as listed under the *TSC Act 1995*) and their habitats as required under the conditions of Forests NSW's Threatened Species Licence for Doubleduke State Forest, most notably:

- the absence of any identification of critical food resources and roost/den sites for threatened fauna species,
- inadequate marking up of exclusion areas and trees required for retention - with logging found to have been undertaken with no mark-up in one area, and
- failure to locate threatened plant species occurring in the area.

In addition to this Forests did undertake logging, roading and burning operations within an Endangered Ecological Community in contravention of the National Parks and Wildlife Act 1974 and failed to implement erosion mitigation measures at hastily constructed stream crossings.

On the Sunday afternoon it was found that logging was being undertaken without any pre-logging mark-up. That evening I wrote to both the Minister for the Environment and the Minister for Forestry, and the DECCW regulators, as well as sending out a media release, in an effort to apprehend the breach. DECCW did not undertake a site inspection until the Tuesday, by which time much of the area had apparently been marked-up. I am still waiting for a formal response.

One of the most significant breaches observed was where logging and machinery intruded into an Endangered Ecological Community, which is specifically excluded from the Threatened Species Licence. This was not a one off event, but was repeated frequently. These are breaches of the National Parks and Wildlife Act 1974 and make those responsible potentially liable for fines of hundreds of thousands of dollars and imprisonment. Though DECCW reputedly deny these breaches occurred.

In total 20 statutory licence conditions, variously applied under 2 Acts of Parliament, were found to have been breached, many on multiple occasions and some

consistently. A further 3 breaches of the Environment Protection Licence were observed, though because of Forests NSW refusal to “switch on” this licence it does not legally apply.

Some of these breaches have been previously documented by the Clarence Environment Centre, North Coast Environment Council and consultants employed by them. Concerns about the logging of Endangered Ecological Communities were included in a letter to the Environment Minister, Frank Sartor, by the Clarence Environment Centre on 15 May 2010. It was thus disappointing that Forests NSW publicly denied that there had been any breaches (Northern Star 22 June 2010), and extremely alarming that they implicated DECCW in the cover up, quoting a Forests NSW spokesperson as stating:

The regulator of the threatened species licence provisions governing the harvest, the Department of Environment Climate Change and Water, has provided Forests NSW with the results of a recent audit of the harvest area and it does not raise any issues with threatened species.

It is hard to believe that an independent auditor was unable to find a single one of the numerous breaches of the 17 Threatened Species Licence conditions, or a single one of the 20 trees felled within the Endangered Ecological Community, identified in this audit. DECCW refused my request for a copy of the audit on the grounds it was not complete.

When considered with DECCW's failure to take immediate action to apprehend the ongoing breach in compartment 146, this reputed failure to identify obvious breaches (even after being alerted to them) raises grave concerns with DECCW's independence and effectiveness as a regulator.

This is the second audit undertaken in this program and adds to the findings of the audit of Compartments 162 and 163 in Yabbra State Forest. It demonstrates that the numerous breaches identified in Yabbra State Forest were not isolated cases and that Forests NSW are routinely and comprehensively breaching licence requirements across the region.

OUTCOMES OF PRELIMINARY AUDIT

Documents relied upon, their legal authority, and breaches identified:

NPWAct: National Parks and Wildlife Act 1974. Breaches observed of clauses 118A and 118D.

TSL: Threatened Species Licence, under the Threatened Species Conservation Act 1995. Breaches observed of conditions 3(a), 5.1(a)(i), 5.1(a)(ii), 5.1(a)(iii), 5.1(f), 5.1(g), 5.1(h), 5.2.1(a), 5.6(c)(ii), 5.6(d)(ii) (systematic), 5.6(f)(iv), 5.6(g)(ii) (systematic), 5.6(g)(iii) (systematic), 6.17(f)), 6.17(g)(i)(apparent), 6.17(g)(iv) (systematic), 6.22(a).

EPL: Environmental Protection Licence, Appendix A, Schedule 4, under Environment Operations Act 1997. Breaches observed of Schedule 5 conditions J45, J46, J52. Note that Forests NSW actually refuse to obtain a licence, though the harvesting plans say they still apply.

FL: Fisheries Licence, under the Fisheries Management Act, 1994. Breaches observed of conditions 8.4.1.(a), 8.4.2.(b), and 8.4.3.(b).

- 1) It is clear that Forests NSW have breached Clauses 118A and 118D of the NPW Act in that they did by act and omission harm and pick the Endangered Ecological Community *Sub-tropical Coastal Floodplain Forest*. Forests NSW were aware that the community occurred in Compartment 145 though did not adequately identify it in the Harvesting Plan or on the ground, consequently logging many trees within it, driving machinery randomly through it and burning it. Even a cursory consideration of the description of this community and comparison with soil and flood data would have alerted Forests NSW to the fact that this EEC is more widespread than their planning allowed.
- 2) An exclusion zone boundary for the *Sub-tropical Coastal Floodplain Forest* EEC was not marked on the Harvest Plan Operational Map for Compartment 145 (breaches TSL 3(a)). Neither was it marked on the ground in Compartment 145 (breaches TSL 5.1 (f)) or excluded from logging and machinery intrusion (breaches TSL 5.1(a)(i), 5.1(a)(ii), 5.1(a)(iii)).
- 3) When inspected, roading and logging operations had been undertaken in one area of Compartment 146 without any attempt to first mark the trees and exclusion areas required (breaches TSL 5.1 (f)), 5.1 (h)), 5.6 (g)(iii)), 6.17 (g)(iv), and apparently 5.2.1 (a)). To the north of the logging area in Compartment 145 only a small number of retained trees had been marked along roads and tracks and elsewhere marking-up was non-existent. To the south of the logging area in Compartment 145 the poor selection of trees appears to reflect post-logging mark-up. This failure to mark-up trees and exclusion areas required to be retained and marked under the TSL was also detected in the Yabbra State Forest audit, indicating that this is now systemic throughout the region.
- 4) Post-logging burning extended into exclusion zones (breaches TSL 5.1(a)(i), 5.1(g))
- 5) There were also widespread and comprehensive breaches of licence conditions relating to:
 - i) the required characteristics of retained recruitment hollow-bearing trees (breaches TSL 5.6 (d) (ii)),
 - ii) the failure to clear or flatten logging debris around the bases of hollow-bearing trees, recruitment hollow-bearing trees, and Yellow-bellied Glider sap-feed trees (breaches TSL 5.6(g) (ii)), and
 - iii) the marking of Yellow-bellied Glider feed trees (Breaches TSL 6.17(g)(iv)).These same systematic failures were found in the Yabbra State Forest audit and indicate these requirements are being consistently and deliberately ignored.
- 6) A clearly identifiable Yellow-bellied Glider sap-feed tree within a heavily logged area (despite being located within an EEC) had not been identified or marked, the required 15 feed trees within 100m had not been marked and consequently retained, and logging slash was stacked around its base (breaches TSL 5.2.1.(a), 5.6(f)(iv), 5.6(g)(ii), 5.6(g)(iii), 6.17(f)), 6.17(g)(i)(apparent)). The failure to identify Yellow-bellied Glider sap-feed trees here and at Yabbra demonstrate that the pre-

logging mark-ups (where they are done) are not being undertaken by an adequately trained person.

- 7) The endangered plant *Lindsaea incisa* was found by a consultant for NCEC within the harvesting area of Compartment 145 which had not been identified or had the required 50m exclusion zone applied (breaches TSL 6.22(a)).
- 8) While Harvesting Plans identify that the Fisheries Licence applies, aside from incorporating it into identification of stream buffers, there does not appear to have been any attempt to identify its requirements or identify whether this is Class 1 or Class 2 habitat (an essential and basic requirement). This also occurred at Yabbra SF and is another systemic failure.
- 9) This refusal to obtain Environment Protection Licences is now common practice. It is primarily being done to allow logging of unmapped drainage lines, though it allows Forests NSW to breach other requirements with impunity (except where they are also covered by the Fisheries Licence). Despite this deliberate avoidance of legal accountability, the Harvesting Plans still claim that requirements will be implemented. This is a systemic problem.
- 10) Two creek crossings on Lower Slopes Road were poorly constructed, without implementation of soil stabilisation measures and thus resulted in significant mobilisation of sediments into both streams (breaches EPL J45, EPL J46, EPL J52, 8.4.1.(a), 8.4.2.(b), 8.4.3.(b), and likely other requirements).

1. MARKING UP

In the south of Compartment 146 logging had only recently commenced. The 146/1 Road and Log Dump 7 had been constructed. Logging had taken place above (to the south of) 146/1 Road and to the north-west of the log dump.

Within the area logged there should have been tree-marking to identify, at a minimum, boundaries of wetlands, excluded forest types and oldgrowth forest, habitat trees and recruits, and Yellow-bellied Glider feed trees.

The only marking observed was along the road for the wetland. Aside from this, there did not appear to have been any marking of excluded forest types, oldgrowth forest, hollow-bearing trees, recruitment hollow-bearing trees, or Yellow-bellied Glider feed trees. This indicates that there had also been no assessment of existing threatened and protected features before or during the marking-up.

These are clear breaches of Forests NSW's Threatened Species Licence requirements to mark exclusion zone boundaries (5.1 (f)), to mark-up at least 100 metres in advance of harvesting operations (5.1 (h)), mark-up hollow-bearing habitat trees and recruitment habitat trees (5.6 (g)(iii)), mark Yellow-bellied Glider feed trees (6.17 (g)(iv)), and appears to be a breach of the requirement to mark the required Threatened and protected features before or during the marking-up (5.2.1 (a)).

In the south of compartment 145, to the north of Log Dump 8, some retained habitat trees had been marked prior to the post logging burn. The burn made subsequent

identification of remaining habitat and recruit habitat trees difficult. However, what was apparent in this area included:

1. large senescent hollow-bearing trees had been felled while nearby damaged late-mature trees without significant hollows had been marked as habitat trees for retention (breaches TSL 5.6 (c) (ii))
2. retained recruitment trees often did not have the potential to grow into hollow-bearing trees because they were suppressed, with poor crown development, comprised inappropriate species, and some were neither mature nor late mature (breaches TSL 5.6 (d) (ii)) (see appendices for examples)
3. logging debris was often piled against the base of retained trees, without there having been any apparent attempt to remove this debris, in some instances slash appeared to have been placed against the bases of trees to encourage incineration (breaches TSL 5.6 (g) (ii))

PHOTO 3&4: Remains of burnt debris piled around retained hollow-bearing trees in Compartment 145



Judging from the poor mark-up in this vicinity, and the nature of the mark-up, it appears likely that this area was marked up after logging (though prior to the burn).

2. ENDANGERED ECOLOGICAL COMMUNITIES

The lower elevations of the area of Doubleduke State forest examined, particularly in Compartment 145, comprise part of the Richmond River floodplain. Evidence for this is provided by both the alluvial soils and the 1:100 year flood mapping (Fig 1) for the area. The Endangered Ecological Community *Sub-tropical Coastal Floodplain Forest of the NSW North Coast bioregion* occurs across all coastal floodplains on the NSW North Coast and is widespread in this area, particularly adjoining Jackybulbin Creek.

Forests NSW must accept that the NSW Scientific Committee has identified all the remaining native vegetation on coastal floodplain soils of northern NSW to be threatened. Thus, for any native vegetation growing on floodplain in the area, the only question is which EEC it is.

In their determination of *Subtropical Coastal Floodplain Forest of the NSW North Coast bioregion*, the Scientific Committee noted that this EEC is:

associated with clay-loams and sandy loams, on periodically inundated alluvial flats, drainage lines and river terraces associated with coastal floodplains.

Floodplains are level landform patterns on which there may be active erosion and aggradation by channelled and overbank stream flow with an average recurrence interval of 100 years or less (adapted from Speight 1990).

The profile description of the overstorey of this community is:

While the composition of the tree stratum varies considerably, the most widespread and abundant dominant trees include Eucalyptus tereticornis (forest red gum), E. siderophloia (grey ironbark), Corymbia intermedia (pink bloodwood) and, north of the Macleay floodplain, Lophostemon suaveolens (swamp turpentine).

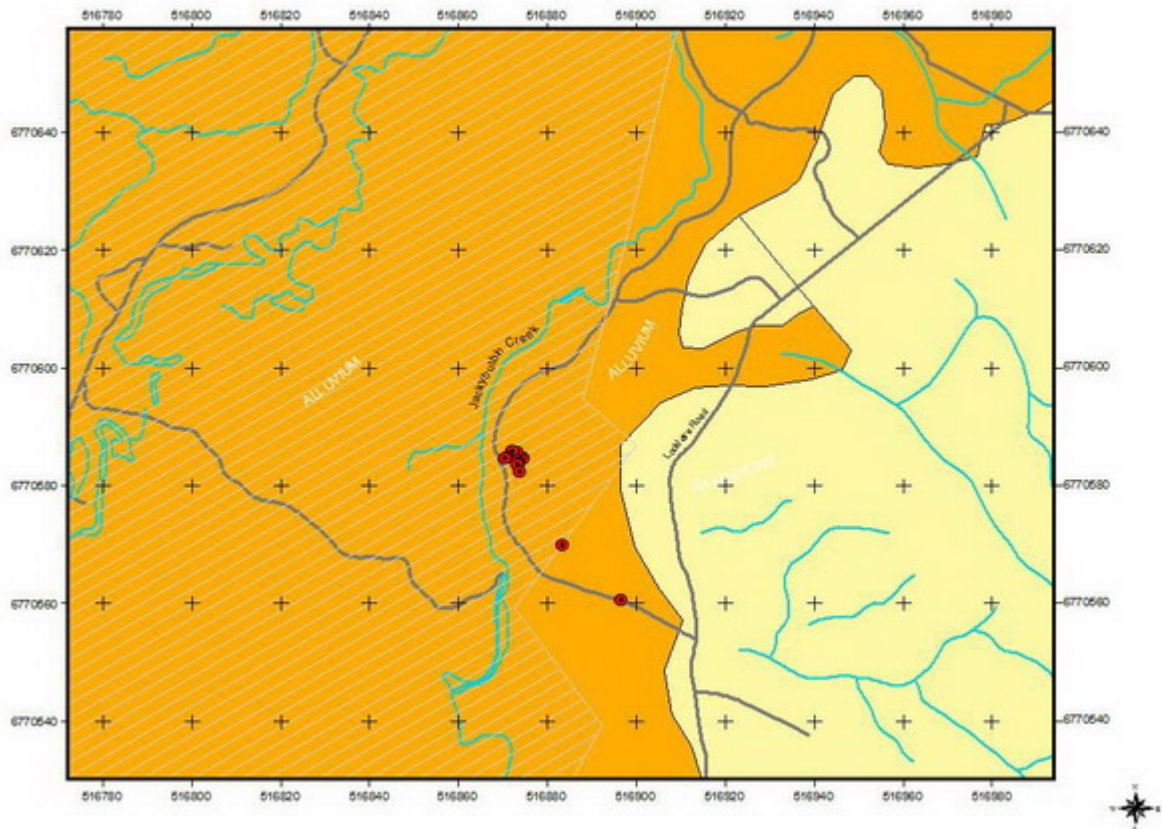
Other trees may be scattered throughout at low abundance or locally common at few sites, particularly where there is an influence from lithic substrates upslope. These include Eucalyptus moluccana (grey box), E. propinqua (grey gum), E. seeana (narrow-leaved red gum), Angophora subvelutina (broad-leaved apple), E. robusta (swamp mahogany), Eucalyptus resinifera subsp. hemilampra (red mahogany), E. acmenoides (white mahogany), Angophora woodsiana, A. paludosa and rainforest trees such as Ficus spp. (figs) and Cupaniopsis spp. (tuckeroos).

Twenty trees of four species (Red Mahogany *E.resinifera*, Small-fruited Grey Gum *E. propinqua*, Swamp Box *Lophostemon suaveolens*, Blackbutt *E. pilularis*) were documented as logged within the EEC *Subtropical Coastal Floodplain Forest of the NSW North Coast bioregion* in Compartment 145 (see Appendix 1). There was also extensive machinery damage within the EEC associated with this logging. The machinery damage appeared to be indiscriminate, with broadscale damage caused by multiple random tracking through areas with few commercial trees. Post-logging burning also extended into this EEC. A Yellow-bellied Glider sap-feed tree within the logged area was also identified in the audit (see Section 3).

PHOTO 5&6: Logging in Coastal Floodplain Forest EEC in Compartment 145.



FIG 1 Location of breaches (red dots) identified on the basis of floristics compared to alluvium (orange-brown) and broad floodplain mapping (pale hatching)



This EEC intergraded with surrounding Blackbutt dominated forests, which it was considered extended into the Coastal Floodplain Forest. The identified logged trees were all considered to be within this EEC, though it was considered that further work on soils and floristics are required to identify clear and scientifically credible criteria to accurately delineate the boundary of this community. This community was identified as an EEC in 2004, so Forests NSW have had ample time to come to terms with their legal obligations. Basic application of readily available soils and flood mapping (as demonstrated above) would have identified areas that were required for checking during planning and marking-up to delineate exclusion areas.

Prior to the NEFA audit the identification of the Endangered Ecological Community was undertaken by Dr Andrew Benwell "Inspection of Vegetation in Compartments 144 and 145 Doubleduke State Forest, 20.6.2010" on behalf of the North Coast Environment Council. He adopted a more conservative delineation of the EEC than NEFA's consultants, though still concluded "... logging was found to have extended into the Subtropical Floodplain Forest EEC in places where merchantable timber was present".

The Threatened Species Licence states:

This licence does not authorise the carrying out of an activity that is likely to:

- 1. Harm an endangered population or an endangered ecological community (as far as animals are concerned);*
- 2. Result in the picking of a plant that is part of an endangered population or endangered community;*
- 3. Damage critical habitat; or*
- 4. Damage to the habitat of an endangered population or endangered community.*

As the Threatened Species Licence does not authorise logging operations in EECs, the National Parks and Wildlife Act 1974 is the primary authority, and it is this Act that Forests NSW have directly contravened. The National Parks and Wildlife Act 1974 No 80 states:

118A Harming or picking threatened species, endangered populations or endangered ecological communities

(1) A person must not:

- (a) harm any animal that is of, or is part of, a threatened species, an endangered population or an endangered ecological community, or
- (b) use any substance, animal, firearm, explosive, net, trap, hunting device or instrument or means whatever for the purpose of harming any such animal.

Penalty:

- (a) in respect of any endangered species, population or ecological community—2,000 penalty units or imprisonment for 2 years or both, and, in a case where an animal of any endangered species, population or ecological community is harmed, an additional 100 penalty units in respect of each animal that is harmed,

...

(2) A person must not pick any plant that is of, or is part of, a threatened species, an endangered population or an endangered ecological community.

Penalty:

- (a) in respect of any endangered species, population or ecological community—2,000 penalty units or imprisonment for 2 years or both, and an additional 100 penalty units in respect of each whole plant that was affected by or concerned in the action that constituted the offence,

...

The undertaking of forestry operations within an EEC and the “picking” of trees within it for commercial gain is a clear breach of the NPW Act. There is also evidence that Forests NSW did cause harm to the vulnerable Yellow-bellied Glider which is part of that EEC (see section 3). Those responsible for it must be prosecuted by the Minister for the Environment, Frank Sartor, who administers that Act.

The Harvesting Plan for Compartment 145 identifies the EEC *Subtropical Coastal Floodplain Forest* as occurring in the compartment and that it should be excluded from logging, though unjustifiably limits consideration to Forest Type 92, stating:

Forest type 92 (Forest Red Gum) is likely to meet the definition of this EEC.

Exclude harvesting from mapped forest type 92 unless the Regional ecologist determines that the forest does not meet the criteria for this EEC.

SFO to search for and exclude further areas of Forest type 92 unless the Regional ecologist determines that the forest does not meet the criteria for this EEC

The National Parks and Wildlife Act 1974 No 80 states:

118D Damage to habitat of threatened species, endangered populations or endangered ecological communities

- (1) A person must not, by an act or an omission, do anything that causes damage to any habitat (other than a critical habitat) of a threatened species, an endangered population or an endangered ecological community if the person knows that the land concerned is habitat of that kind.

Penalty: 1,000 penalty units or imprisonment for 1 year or both

A penalty unit is worth \$110.

It is clear that Forests NSW have breached Clause 118D of the National Parks and Wildlife Act in that they did by act and omission harm and pick the *Subtropical Coastal Floodplain Forest* EEC. Even a cursory consideration of the description of this community and comparison with soil and flood data would have alerted Forests NSW to the fact that the *Subtropical Coastal Floodplain Forest* EEC was not confined to Forest type 92.

It is evident that Forests NSW knew this community should have been excluded from logging, yet it has not been identified, in its own right, on the Harvesting Plan for Compartment 145. Significantly it has been identified as "EEC Protection" on the Harvesting Plan for Compartment 146. This has resulted in the boundary of the EEC being truncated at the boundary of Compartment 145, despite this Compartment lying downslope from Compartment 146. The failure to accurately identify the EEC exclusion on the Harvest Plan Operational Map, Compartment 145 is a breach of TSL condition 3(a).

The failure to exclude logging and machinery from the *Subtropical Coastal Floodplain Forest* EEC is a breach of TSL 5.1 (a) (i), (ii), (iii). The failure to mark the boundary of this EEC exclusion area is a breach of TSL 5.1 (f).

Post-logging burning in Compartment 145 extended into an exclusion zone intended to protect either a rare and non-commercial forest type or the EEC (or both) without any adequate attempts being made to exclude it (GDA 94: E0516856 N6770318). Forestry operations, and particularly hazard reduction works, are prohibited in exclusion zones (breaches TSL 5.1 (a) (i), 5.1 (g)).

PHOTOS 7&8. Burning within exclusion zone (shown by 3 pink bars)



3. SPECIES REQUIREMENTS

There are a large number of records of Yellow-bellied Glider *Petaurus australis* in the area, particularly in Compartment 145. The Threatened Species Licence 6.17 states:

g) Where there is a record of a Yellow-bellied Glider in a compartment or within 100 metres outside the boundary of the compartment, the following must apply:

i. Within a 100 metres radius of each retained Yellow-bellied Glider sap feed tree, observation or den site record, 15 feed trees must be retained. Yellow-bellied Glider sap feed trees must not be counted towards these 15 feed trees. Retained feed trees must have good crown development and should have minimal butt damage and should not be suppressed. Mature and late mature trees must be retained as feed trees where these are available.

ii. Within a 200 metres radius of a Yellow-bellied Glider call detection site record, 15 feed trees must be retained. Retained feed trees must have good crown development and should have minimal butt damage and should not be suppressed. Mature and late mature trees must be retained as feed trees where these are available.

iii. The feed trees retained in condition 6.17 (g) (i) and (ii) must be of the same species as the identified sap feed tree or identified den tree, or should be trees that shed their bark in long strips, eg. species from Blue, Flooded, Grey, Red and White Gum groups.

iv. The feed trees retained in condition 6.17 (g) (i) and (ii) must be marked for retention.

No Yellow-bellied Glider feed trees were identified as being marked within 200m of call detection sites inspected in the south of compartment 146 and north of compartment 145 (breaches TSL 6.17 (g)(iv) and likely breaches (ii) and (iii)). This apparently deliberate failure to mark Yellow-bellied Glider feed trees was also found in Yabbra State Forest and is obviously a systemic problem.

A Yellow-bellied Red Bloodwood *Eucalyptus gummifera* sap-feed tree was located within the *Subtropical Coastal Floodplain Forest* EEC in Compartment 145 (MGAs; E516884, N6770580). Despite being within a heavily logged area the feed tree was not marked. It is obvious that an adequately trained person did not conduct a thorough search for, record and appropriately mark this sap-feed tree (breaches 5.2.1.(a)), it was not marked for retention (breaches 5.6(f)(iv), 5.6 (g) (iii), 6.17(f)), the required 15 feed trees within 100m were not marked for retention (breaches 6.17 (g)(i) and it did not appear that they were retained (apparently breaches 6.17(g)(i)), and logging slash was piled around the base without there being any apparent attempt to remove this debris (breaches 5.6 (g) (ii)).

PHOTOS 9&10: Yellow-bellied Glider Red Bloodwood sap-feed tree. Note the debris piled up around the base of the tree in Photo 10, like a funeral pyre.



In his assessment for the North Coast Environment Council Dr Andrew Benwell "Inspection of Vegetation in Compartments 144 and 145 Doubleduke State Forest, 20.6.2010" found "*The endangered species *Lindsaea incisa* (a small ground fern) was identified at a site that appeared to be within the harvestable area of cpt 145 ... No pre-logging flora surveys or flora assessments that could have detected this species appear to have been carried out by FNSW*".

This breaches the TSL requirement 6.22(a) to retain a 50m exclusion zone around all individuals of *Lindsaea incisa*.

He also found:

*One threatened plant species, the grass *Paspalidium grandispiculatum*, was recorded in the harvestable area of cpt 144. This species is listed under the EPBC Act (1999) as Vulnerable and a preliminary determination of the species as vulnerable species under the TSC Act was made on 19/2/2010 (still under public exhibition).*

This species was recorded amongst earth on an upturned stump at the edge of the recently constructed or upgraded access track, so would appear to have been directly damaged during track construction (see attached spreadsheet).

This reflects another aspect of the ongoing failure by Forests NSW to adequately identify and protect threatened species.

4. STREAM PROTECTION

In Compartment 144 Lower Slopes Road is in the process of being constructed up the valley marking the southern boundary of the compartment. At the time of our audit the section of road from the end of the "new section" marked on the Harvest Plan Operational Map, to just past the first crossing of a mapped stream had only been roughly constructed, with temporary bridges placed across an unmapped drainage line (shown as a "temporary dry" crossing on the Harvesting Plan) and across the mapped creek (shown as an "approved crossing").

Both crossings had apparently been hastily constructed. There was no attempt to minimise disturbance, stabilise disturbed areas, or implement erosion mitigation

works. Despite both bridges only being in place for a short period of time the works had resulted in significant mobilisation of sediments into the streams.

PHOTOS 11&12: Crossing 1



PHOTOS 13&14: Crossing 2



The Operational Harvesting Plans state:

This operation is a non-scheduled operation under the Environment Protection Licence issued under section 55 of the Protection of the Environment Operations Act 1997. Roding and harvesting operations are not licensed. All EPL conditions will apply to harvesting and roding operations

This refusal to obtain Environmental Protection Licences is now common practice. It is primarily being done to allow logging of unmapped drainage lines, though it enables Forests NSW to breach other requirements with impunity (except where they are also covered by the Fisheries Licence). Without this legal constraint Forests NSW have become very lax in avoiding stream pollution (ie while the Yabba audit documented one breach at a stream crossing by a road, subsequent inspections identified another 2 that Forests NSW were forced to remediate). Despite this deliberate avoidance of legal accountability, the Harvesting Plans still claim that requirements will be implemented, even when there is no intention to do so in relation

to unmapped drainage lines. Schedule 5, Operating Conditions for Roads, of the EPL places constraints on the activities that can occur.

While the Harvesting Plans recognise that the Fisheries Licence applies, aside from incorporating its requirements into a table of stream buffers there does not appear to have been any attempt to identify its requirements or identify whether this is Class 1 or Class 2 habitat. The Fisheries Licence "8.4 General Conditions for In-Stream Works" places constraints on the activities which can occur.

Both crossings were constructed in a manner which caused disturbance to stream beds and banks and caused transport of sediments into streams (breaches EPL J45, FL 8.4.1.(a)), soil stabilisation of disturbed areas was not undertaken within 20 metres (breaches EPL J52, FL 8.4.2.(b)) , and permanent or temporary soil stabilisation measures were not put in within 5 days on banks (breaches EPL J46, FL 8.4.3.(b)). These identified breaches are indicative of a disregard for stream pollution. It is likely that other Licence conditions were breached.

5. APPENDICIES

SIGNIFICANT FAUNA RECORDS (Threatened (*TSC Act*) and conservation priority vertebrate species)

Little Lorikeet *Glossopsitta pusilla* (pairs, small flocks, feeding on *Eucalyptus siderophloia*, *E. robusta* nectar)

records MGAs: E519805, N6772258 (Cmpt 147); E519160, N6772266 (Cmpt 145); E518800, N6772700 (Cmpt 145)

Powerful Owl *Ninox strenua* (1 responded to call playback)

record MGAs: E519805, N6772258 (Cmpt 147)

Barking Owl *Ninox connivens* (pair responded to call playback, calling, spotlighted)

record MGAs: E517354, N6771346 (Cmpt 145)

Masked Owl *Tyto novaehollandiae* (1 foraging, calling, spotlighted)

record MGAs: E517354, N6771346 (Cmpt 145)

Koala *Phascolarctos cinereus* (scratches on base of *Eucalyptus propinqua*)

record MGAs: E520143, N6773720 (Cmpt 144)

Greater Glider *Petauroides volans* (pair foraging in *Eucalyptus resinifera*)

record MGAs: E519481, N6773334 (Cmpt 144)

Grey-headed Flying-fox *Pteropus poliocephalus* (small groups foraging through, mostly on flowering *Eucalyptus robusta*) (Cmpt 145)

record MGAs: E516700, N6770500

Yellow-bellied Glider *Petaurus australis* feed tree *Eucalyptus gummifera*,

record MGAs; E516884, N6770580

MARKED HABITAT AND RECRUITMENT TREES

Crown Development (P:poor, M:moderate, Good)

Butt damage (% circumference),

Growth Stage (Y:young, M: mature, LM: Late Mature, S:senescent)

Suppressed (Y/N)

DOUBLEDUKE 1: MARKED HABITAT AND RECRUITMENT TREES, AMG: 516966, 6769980

	SPECIES	DIAMETER	CROWN (P/M/G)	BUTT D. %	GROWTH (Y/M/LM/S)	SUPPRESS Y/N
HABITAT	Blackbutt	120cm	G	-	S	N
RECRUITMENT	Blackbutt	36cm	M	-	Y	Y

Has debris been minimised, removed and/or flattened within 5 m? No, debris has been pushed around base of habitat tree.

Comments:

DOUBLEDUKE 2: MARKED HABITAT AND RECRUITMENT TREES, AMG: 516984, 6770004

	SPECIES	DIAMETER	CROWN (P/M/G)	BUTT D. %	GROWTH (Y/M/LM/S)	SUPPRESS Y/N
HABITAT	Red	100cm	M	-	S	N

	Mahogany					
RECRUITMENT	Turpentine	40cm	P	-	M	Y

Has debris been minimised, removed and/or flattened within 5 m? No

Comments:

DOUBLEDUKE 3: MARKED HABITAT AND RECRUITMENT TREES, AMG: 516959, 6770018

	SPECIES	DIAMETER	CROWN (P/M/G)	BUTT D. %	GROWTH (Y/M/LM/S)	SUPPRESS Y/N
HABITAT	Blackbutt	78	G	-	LM	N
RECRUITMENT	Bloodwood	34	P	-	M	Y

Has debris been minimised, removed and/or flattened within 5 m? No, debris has been left within 5m of recruit.

Comments: No obvious large hollows in habitat tree. Recruit tree severely suppressed.

TREES FELLED IN ENDANGERED ECOLOGICAL COMMUNITY

SPECIES	Easting MGA	Northing MGA
Red Mahogany	519921	6773552
Blackbutt	517095	6770207
Grey Gum	516909	6770607
Grey Gum	516892	6770624
Red Mahogany	516878	6770637
Red Mahogany	516867	6770634
Red Mahogany	516862	6770642
Swamp Box	516838	6770614
Grey Gum	516834	6770608
Red Mahogany	516826	6770611
Red Mahogany	516826	6770611
Grey Gum	516887	6770608
Blackbutt	516868	6770557
Blackbutt	516893	6770549
Blackbutt	516889	6770552
Blackbutt	516899	6770559
Blackbutt	516903	6770557
Blackbutt	516900	6770559
Blackbutt	516897	6770558
Blackbutt	516900	6770550

Descriptions of 3 principal sites where intrusions were observed::

EEC1

Canopy: Red Mahogany *Eucalyptus resinifera*, White Mahogany *Eucalyptus acmenoides*, Forest Red Gum *Eucalyptus tereticornis*, Blackbutt *Eucalyptus pilularis*. Height = 30-35 m

Mid: Brown Salwood *Acacia disparrima*, Red Ash *Alphitonia excelsa*, Swamp Turpentine *Lophostemon suaveolens*, Hop Bush *Dodonea triquetra*, Broad-leaved Paperbark *Melaleuca quinquenervia* Height = 5-12 m

Ground: Tall Saw-sedge *Gahnia clarkei*, Blady Grass *Imperata cylindrica*, other native grasses. Height = 0-3 m

EEC2

Canopy: Red Mahogany *Eucalyptus resinifera*, (dbh = 1 m), Swamp Turpentine *Lophostemon suaveolens*, Turpentine *Syncarpia glomulifera*

Other species: Geebung *Persoonia stradbrokeensis*, Yellow Ti-tree *Leptospermum polygalifolium*

EEC3

Canopy: Grey Gum *Eucalyptus propinqua*, Red Mahogany *Eucalyptus resinifera*, Height = 25 m

Mid: Murrogun *Cryptocarya microneura*, Brown Salwood *Acacia disparrima*, Yellow Ti-tree *Leptospermum polygalifolium*, Prickly-leaved Ti-tree *Melaleuca styphelioides*, Narrow-leaved Ti-tree *Melaleuca alternifolia*.

Ground: Blady Grass *Imperata cylindrica*, native grasses and sedges.